''(8) the inability of government agencies to cooperate effectively, the difficulty of obtaining public support for new systems and rights-of-way, and the high cost of capital financing discourage private firms from investing in the development of new transportation equipment and systems; therefore, the Federal Government should sponsor and coordinate research and development of new technologies to provide safer, more convenient, and affordable transportation systems for use in the future; and

''(9) an effective high technology applied research and development program should be implemented quickly by strengthening the Department of Transportation research and development staff and by contracting with private industry for specific development projects.

''(b) SURFACE TRANSPORTATION RESEARCH AND DEVELOPMENT PLAN.—

''(1) DEVELOPMENT.—The Secretary shall develop an integrated national surface transportation research and development plan (hereinafter in this subsection referred to as the 'plan').

''(2) FOCUS.—The plan shall focus on surface transportation systems needed for urban, suburban, and rural areas in the next decade.

''(3) CONTENTS.—The plan shall include the following:

''(A) Details of the Department's surface transportation research and development programs, including appropriate funding levels and a schedule with milestones, preliminary cost estimates, appropriate work scopes, personnel requirements, and estimated costs and goals for the next 3 years for each area of research and development.

''(B) A 10-year projection of long-term programs in surface transportation research and development and recommendations for the appropriate source or mechanism for surface transportation research and development funding, taking into account recommendations of the Research and Development Coordinating Council of the Department of Transportation and the plan of the National Council on Surface Transportation Research.

''(C) Recommendations on changes needed to assure that Federal, State, and local contracting procedures encourage the adoption of advanced technologies developed as a consequence of the research programs in this Act [Pub. L. 102–240, see Tables for classification].

''(4) OBJECTIVES.—The plan shall provide for the following:

''(A) The development, within the shortest period of time possible, of a range of technologies needed to produce convenient, safe, and affordable modes of surface transportation to be available for public use beginning in the mid-1990's.

''(B) Maintenance of a long-term advanced research and development program to provide for next generation surface transportation systems.

''(5) COOPERATION WITH INDUSTRY.—A primary component of the plan shall be cooperation with industry in carrying out this part [part A (§§ 6001–6024) of title VI of Pub. L. 102–240, enacting sections 325 and 326 of this title, sections 3711b and 3711c of Title 15, Commerce and Trade, section 111 of Title 49, Transportation, and section 1625 of former Title 49, Transportation, amending sections 204, 307, and 321 of this title, section 5316 of Title 5, Government Organization and Employees, sections 3708 and 3712 to 3715 of Title 15, sections 101 and 301 of Title 49, and sections 1607c and 1608 of former Title 49, enacting provisions set out as notes under sections 101, 112, and 307 of this title and sections 111 and 301 of Title 49, and amending provisions set out as notes under section 1608 of former Title 49] and strengthening the manufacturing capabilities of United States firms in order to produce products for surface transportation systems.

''(6) CONFORMANCE WITH PLAN.—All surface transportation research and development within the Department of Transportation shall be included in the plan and shall be evaluated in accordance with the plan.

''(7) COORDINATION.—In developing the plan and carrying out this part, the Secretary shall consult with and, where appropriate, use the expertise of other Federal agencies and their laboratories.

''(8) TRANSMITTAL.—On or before January 15, 1993, and annually thereafter, the Secretary shall transmit the plan to Congress, together with the Secretary's comments and recommendations. The Secretary shall review and update the plan before each transmittal under this paragraph.

''(9) RECOMMENDATIONS FOR ALTERNATIVES.—In the event a different technology or alternative program can be identified that would accomplish the same or better results than those described in this part, the Secretary may make recommendations for an alternative, and shall promptly report such alternative recommendations to Congress.''

### § 509. National cooperative freight transportation research program

(a) ESTABLISHMENT.—The Secretary shall establish and support a national cooperative freight transportation research program.

(b) AGREEMENT.—The Secretary shall enter into an agreement with the National Academy of Sciences to support and carry out administrative and management activities relating to the governance of the national cooperative freight transportation research program.

(c) ADVISORY COMMITTEE.—The National Academy of Sciences shall select an advisory committee consisting of a representative cross-section of freight stakeholders, including the Department of Transportation, other Federal agencies, State transportation departments, local governments, nonprofit entities, academia, and the private sector.

(d) GOVERNANCE.—The national cooperative freight transportation research program established under this section shall include the following administrative and management elements:

(1) NATIONAL RESEARCH AGENDA.—The advisory committee, in consultation with interested parties, shall recommend a national research agenda for the program. The agenda shall include a multiyear strategic plan.

(2) INVOLVEMENT.—Interested parties may—

(A) submit research proposals to the advisory committee;

(B) participate in merit reviews of research proposals and peer reviews of research products; and

(C) receive research results.

(3) OPEN COMPETITION AND PEER REVIEW OF RESEARCH PROPOSALS.—The National Academy of Sciences may award research contracts and grants under the program through open competition and merit review conducted on a regular basis.

(4) EVALUATION OF RESEARCH.—

(A) PEER REVIEW.—Research contracts and grants under the program may allow peer review of the research results.

(B) PROGRAMMATIC EVALUATIONS.—The National Academy of Sciences may conduct periodic programmatic evaluations on a regular basis of research contracts and grants.

(5) DISSEMINATION OF RESEARCH FINDINGS.—The National Academy of Sciences shall dis-

seminate research findings to researchers, practitioners, and decisionmakers, through conferences and seminars, field demonstrations, workshops, training programs, presentations, testimony to government officials, the World Wide Web, publications for the general public, and other appropriate means.

(e) CONTENTS.—The national research agenda required under subsection (d)(1) shall include research in the following areas:

(1) Techniques for estimating and quantifying public benefits derived from freight transportation projects.

(2) Alternative approaches to calculating the contribution of truck and rail traffic to congestion on specific highway segments.

(3) The feasibility of consolidating origins and destinations for freight movement.

(4) Methods for incorporating estimates of international trade into landside transportation planning.

(5) The use of technology applications to increase capacity of highway lanes dedicated to truck-only traffic.

(6) Development of physical and policy alternatives for separating car and truck traffic.

(7) Ways to synchronize infrastructure improvements with freight transportation demand.

(8) The effect of changing patterns of freight movement on transportation planning decisions relating to rest areas.

(9) Other research areas to identify and address emerging and future research needs related to freight transportation by all modes.

(f) FUNDING.—

(1) FEDERAL SHARE.—The Federal share of the cost of an activity carried out under this section shall be up to 100 percent.

(2) USE OF NON-FEDERAL FUNDS.—In addition to using funds authorized for this section, the National Academy of Sciences may seek and accept additional funding sources from public and private entities capable of accepting funding from the Department of Transportation, States, local governments, nonprofit foundations, and the private sector.

(3) PERIOD OF AVAILABILITY.—Amounts made available to carry out this section shall remain available until expended.

(Added Pub. L. 109–59, title V, § 5209(a), Aug. 10, 2005, 119 Stat. 1800.)

PRIOR PROVISIONS

A prior section 509, added Pub. L. 90–495, § 30, Aug. 23, 1968, 82 Stat. 833, related to relocation assistance programs on Federal highway projects, prior to repeal by Pub. L. 91–646, title II, § 220(a)(10), Jan. 2, 1971, 84 Stat. 1903.

MOTOR CARRIER EFFICIENCY STUDY

Pub. L. 109–59, title V, § 5503, Aug. 10, 2005, 119 Stat. 1821, provided that:

''(a) IN GENERAL.—The Secretary [of Transportation], in coordination with the motor carrier and wireless technology industry, shall conduct a study to—

''(1) identify inefficiencies in the transportation of freight;

''(2) evaluate the safety, productivity, and reduced cost improvements that may be achieved through the use of wireless technologies to address the inefficiencies identified in paragraph (1); and

''(3) conduct, as appropriate, field tests demonstrating the technologies identified in paragraph (2).

''(b) PROGRAM ELEMENTS.—The program shall include, at a minimum, the following:

''(1) Fuel monitoring and management systems.

''(2) Radio frequency identification technology.

''(3) Electronic manifest systems.

''(4) Cargo theft prevention.

''(c) FEDERAL SHARE.—The Federal share of the cost of the study under this section shall be 100 percent.

''(d) ANNUAL REPORT.—The Secretary [of Transportation] shall prepare and submit to Congress an annual report on the programs and activities carried out under this section.

''(e) FUNDING.—Of the amounts made available under section 5101(a)(1) of this Act [119 Stat. 1779], the Secretary [of Transportation] shall make available $1,250,000 to the Federal Motor Carrier Safety Administration for each of fiscal years 2006 through 2009 to carry out this section.''

### § 510. Future strategic highway research program

(a) ESTABLISHMENT.—The Secretary, in consultation with the American Association of State Highway and Transportation Officials, shall establish and carry out, acting through the National Research Council of the National Academy of Sciences, the future strategic highway research program.

(b) COOPERATIVE AGREEMENTS.—The Secretary may make grants to, and enter into cooperative agreements with, the American Association of State Highway and Transportation Officials and the National Academy of Sciences to carry out such activities under this section as the Secretary determines are appropriate.

(c) PROGRAM PRIORITIES.—

(1) PROGRAM ELEMENTS.—The program established under this section shall be based on the National Research Council Special Report 260, entitled ''Strategic Highway Research: Saving Lives, Reducing Congestion, Improving Quality of Life'' and the results of the detailed planning work subsequently carried out in 2002 and 2003 to identify the research areas through National Cooperative Research Program Project 20–58. The research program shall include an analysis of the following:

(A) Renewal of aging highway infrastructure with minimal impact to users of the facilities.

(B) Driving behavior and likely crash causal factors to support improved countermeasures.

(C) Reducing highway congestion due to nonrecurring congestion.

(D) Planning and designing new road capacity to meet mobility, economic, environmental, and community needs.

(2) DISSEMINATION OF RESULTS.—The research results of the program, expressed in terms of technologies, methodologies, and other appropriate categorizations, shall be disseminated to practicing engineers for their use, as soon as practicable.

(d) PROGRAM ADMINISTRATION.—In carrying out the program under this section, the National Research Council shall ensure, to the maximum extent practicable, that—

(1) projects and researchers are selected to conduct research for the program on the basis